

CLAIMS

What is claimed is:

1. An antibody that specifically binds to a c-erbB2 receptor epitope bound by F5 or C1.
2. The antibody of claim 1, wherein said antibody is an internalizing antibody.
3. The antibody of claim 1, wherein said antibody comprises an amino acid sequence selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 1 having conservative substitutions, and SEQ ID NO: 2 having conservative substitutions.
4. The antibody of claim 1, wherein said antibody shares at least 70% sequence identity with the amino acid sequence of SEQ ID NO: 1 or SEQ ID NO: 2 and wherein said antibody has a binding affinity for -erbB2 on cells of at least 10 M.
5. The antibody of claim 1, wherein the amino acid sequence of said antibody differs from the amino acid sequence of SEQ ID NO: 1 or SEQ ID NO: 2 by no more than 30 residues.
6. The antibody of claim 1, wherein said antibody comprises a complementarity determining region (CDR) of SEQ ID NO: 1.
7. The antibody of claim 1, wherein said antibody comprises a complementarity determining region (CDR) of SEQ ID NO: 2.
8. The antibody of claim 1, wherein said antibody comprises at least two complementarity determining region (CDRs) of SEQ ID NO: 1.
9. The antibody of claim 1, wherein said antibody comprises at least two complementarity determining regions (CDRs) of SEQ ID NO: 2.

10. The antibody of claim 1, wherein said antibody comprises at least two complementarity determining region (CDRs) selected from the group consisting of the complementarity determining regions of SEQ ID NO: 1, and complementarity determining regions of SEQ ID NO: 2.

11. The antibody of claim 1, wherein said antibody comprises at least three complementarity determining region (CDRs) selected from the group consisting of the complementarity determining regions of SEQ ID NO: 1, and complementarity determining regions of SEQ ID NO: 2.

12. The antibody of claim 11, wherein said antibody has three complementarity determining regions of the amino acid sequence of SEQ ID NO: 1.

13. The antibody of claim 11, wherein said antibody has three complementarity determining regions of the amino acid sequence of SEQ ID NO: 2.

14. The antibody of claim 1, wherein said antibody has the amino acid sequence of SEQ ID NO: 1.

15. The antibody of claim 1, wherein said antibody has the amino acid sequence of SEQ ID NO: 2.

16. An antibody that specifically binds to a c-erbB2 receptor, said antibody comprising least 10 contiguous amino acids from the polypeptide sequence as set forth in SEQ ID NO: 1 or SEQ ID NO: 2, wherein:

said antibody, when presented as an antigen, elicits the production of an anti-idiotypic antibody that specifically binds to a polypeptide sequence as set forth in SEQ ID NO: 1 or SEQ ID NO: 2; and

said antibody does not bind to antisera raised against the polypeptide set forth in SEQ ID NO: 1 and SEQ ID NO: 2, that has been fully immunosorbed with the polypeptides set forth in SEQ ID NO: 1 and in SEQ ID NO: 2.

17. The antibody of claim 16, wherein said antibody shares at least 70% sequence identity with the amino acid sequence of SEQ ID NO: 1 or SEQ ID NO: 2 and wherein said antibody has a binding affinity for -erbB2 on cells of at least 10 :M.

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1 18. The antibody of claim 16, wherein the amino acid sequence of said  
2 antibody differs from the amino acid sequence of SEQ ID NO: 1 or SEQ ID NO: 2 by no  
3 more than 30 residues.

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1 19. The antibody of claim 16, wherein said antibody comprises a  
2 complementarity determining region (CDR) of SEQ ID NO: 1.

1 20. The antibody of claim 16, wherein said antibody comprises a  
2 complementarity determining region of SEQ ID NO: 2.

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1 21. The antibody of claim 1, wherein said antibody has the amino acid  
2 sequence of SEQ ID NO: 1.

1 22. The antibody of claim 1, wherein said antibody has the amino acid  
2 sequence of SEQ ID NO: 2.

1 23. A method of specifically delivering an effector molecule to a cell  
2 bearing a c-erbB2 receptor, said method comprising:  
3 providing a chimeric molecule comprising said effector molecule  
4 attached to an antibody of claim 1 or 16; and  
5 contacting said cell bearing a c-erbB2 with said chimeric molecule,  
6 whereby said chimeric molecule specifically binds to said cell

1 24. The method of claim 23, wherein said effector molecule is selected  
2 from the group consisting of a cytotoxin, a label, a radionuclide, a drug, a liposome, a ligand,  
3 and an antibody.

1 25. The method of claim 23, wherein said chimeric molecule is a fusion  
2 protein.

1 26. The method of claim 23, wherein said cell is a cancer cell.

1 27. The method of claim 26, wherein said cancer cell is a breast cancer  
2 cell.

1                   28.     The method of claim 23, wherein said antibody shares at least 70%  
2     sequence identity with the amino acid sequence of SEQ ID NO: 1 or SEQ ID NO: 2 and  
3     wherein said antibody has a binding affinity for -erbB2 of at least 10 M.

1                   29.     The method of claim 23, wherein the amino acid sequence of said  
2     antibody differs from the amino acid sequence of SEQ ID NO: 1 or SEQ ID NO: 2 by no  
3     more than 30 residues.

1                   30.     The method of claim 23, wherein said antibody comprises a  
2     complementarity determining region (CDR) of SEQ ID NO: 1.

1                   31.     The method of claim 23, wherein said antibody comprises a  
2     complementarity determining region (CDR) of SEQ ID NO: 2.

1                   32.     The method of claim 23, wherein said antibody has the amino acid  
2     sequence of SEQ ID NO: 1.

1                   33.     The method of claim 23, wherein said antibody has the amino acid  
2     sequence of SEQ ID NO: 2.

1                   34.     A chimeric molecule that specifically binds a cell bearing a c-erbB-2,  
2     said chimeric molecule comprising an effector molecule attached to an antibody of claims 1  
3     or 16.

1                   35.     The chimeric molecule of claim 34, wherein said effector is selected  
2     from the group consisting of a cytotoxin, a label, a radionuclide, a drug, a liposome, a ligand,  
3     and an antibody.

4                   36.     The chimeric molecule of claim 34, wherein said chimeric molecule is  
5     a fusion protein.

1                   37.     The chimeric molecule of claim 34, wherein said cell is a cancer cell.

1                   38.     The chimeric molecule of claim 37, wherein said cancer cell is a  
2     breast cancer cell.

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1 39. The chimeric molecule of claim 34, wherein said antibody shares at  
2 least 70% sequence identity with the amino acid sequence of SEQ ID NO: 1 or SEQ ID NO:  
3 2 and wherein said antibody has a binding affinity for -erbB2 of at least 10 :M.

1 40. The chimeric molecule of claim 34, wherein the amino acid sequence  
2 of said antibody differs from the amino acid sequence of SEQ ID NO: 1 or SEQ ID NO: 2 by  
3 no more than 30 residues.

1 41. The chimeric molecule of claim 34, wherein said antibody comprises  
2 a complementarity determining region (CDR) of SEQ ID NO: 1.

1 42. The chimeric molecule of claim 34, wherein said antibody comprises  
2 a complementarity determining region (CDR) of SEQ ID NO: 2.

1 43. The chimeric molecule of claim 34, wherein said antibody has the  
2 amino acid sequence of SEQ ID NO: 1.

1 44. The chimeric molecule of claim 34, wherein said antibody has the  
2 amino acid sequence of SEQ ID NO: 2.

1 45. A nucleic acid encoding an antibody that specifically binds to the  
2 epitope bound by F5 (SEQ ID NO: 1) or C1 (SEQ ID NO: 2).

1 46. The nucleic acid of claim 45, wherein said nucleic acid encodes an  
2 amino acid sequence selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 2,  
3 SEQ ID NO: 1 having conservative substitutions, and SEQ ID NO: 2 having conservative  
4 substitutions.

1 47. The nucleic acid of claim 45, wherein nucleic acid encodes an  
2 antibody that shares at least 70% sequence identity with the amino acid sequence of SEQ ID  
3 NO: 1 or SEQ ID NO: 2 and wherein said antibody has a binding affinity for -erbB2 on cells  
4 of at least 10 :M.

1 48. The nucleic acid of claim 45, said nucleic acid encodes an amino acid  
2 sequence of said antibody that differs from the amino acid sequence of SEQ ID NO: 1 or  
3 SEQ ID NO: 2 by no more than 30 residues.

1 49. The nucleic acid of claim 45, wherein said nucleic acid encodes a  
2 complementarity determining region (CDR) of SEQ ID NO: 1.

1 50. The nucleic acid of claim 45, wherein said nucleic acid encodes a  
2 complementarity determining region (CDR) of SEQ ID NO: 2.

1 51. The nucleic acid of claim 45, wherein said nucleic acid encodes the  
2 amino acid sequence of SEQ ID NO: 1.

1 52. The nucleic acid of claim 45, wherein said nucleic acid encodes the  
2 amino acid sequence of SEQ ID NO: 2.

1 53. A pharmaceutical composition comprising a pharmacological  
2 excipient and the antibody of claims 1 or 16

54. A pharmaceutical composition comprising a pharmacological  
excipient and the chimeric molecule of claim 34.

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